FIG. 1A

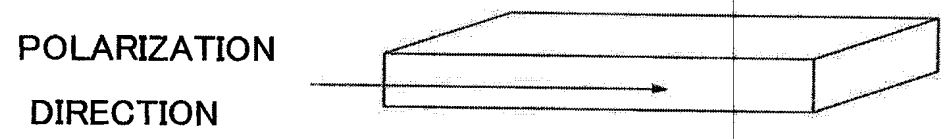


FIG. 1B

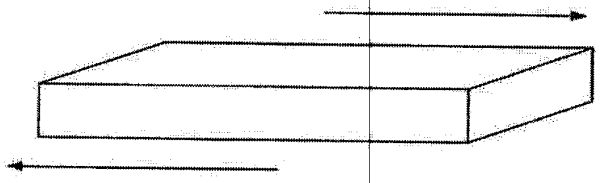


FIG. 2

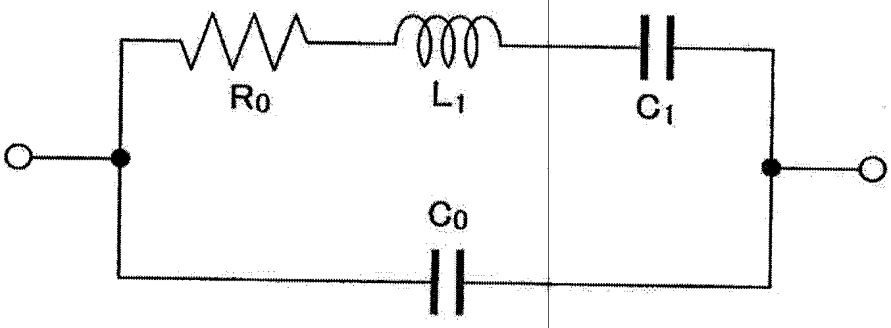


FIG. 3

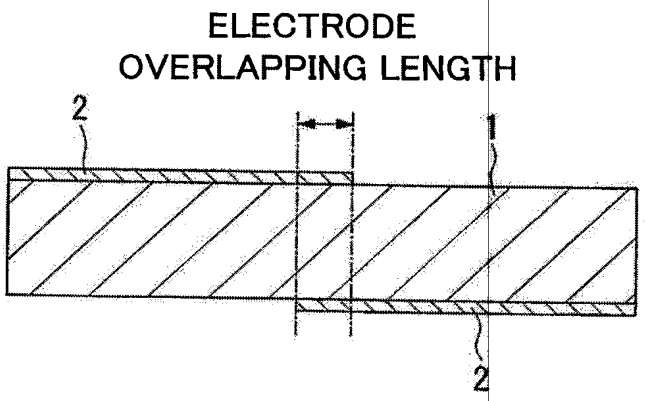
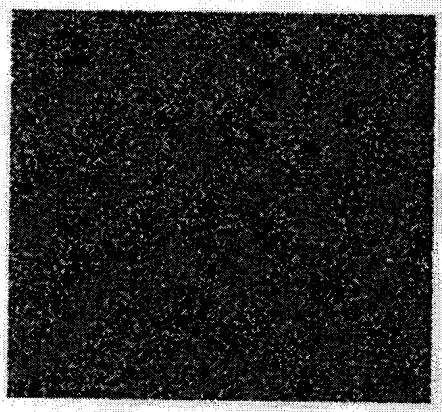


FIG. 4

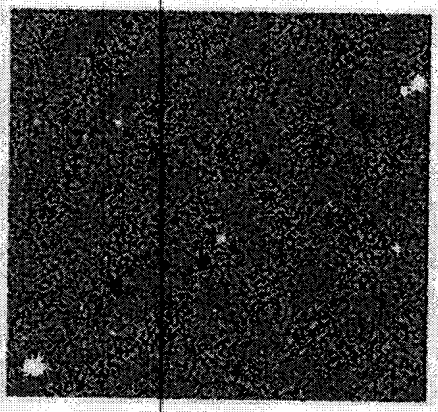
SPECIMEN No.	ADDITIVE		MAIN COMPONENT $Pb_{\alpha}[(Mn_{1/3}Nb_{2/3})_xTi_yZr_z]O_3$ (x+y+z=1)				ELECTRIC PROPERTIES Q_{max}	MECHANICAL STRENGTH σ_{b3} (N/mm^2)	HEAT RESISTING PROPERTIES $\lvert \Delta F_0 \rvert$ (%)	AL-CONTAINING PHASE
	Al_2O_3 (wt%)	SiO_2 (wt%)	α (mol)	x (mol)	y (mol)	z (mol)				
1	0.1	0.02	0.99	0.10	0.53	0.37	120	155	0.11	×
2	0.3						135	172	0.07	○
3	0.5						136	179	0.08	○
4	0.7						130	192	0.07	○
5	1.0						133	192	0.07	○

FIG. 5

SPECIMEN No. 1

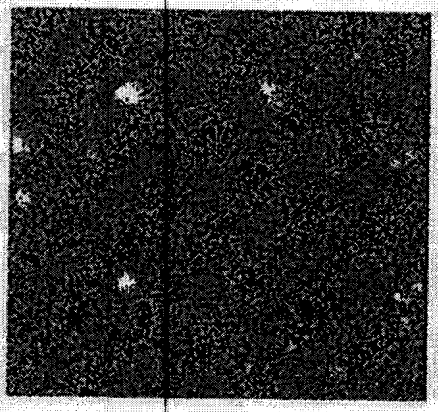


SPECIMEN No. 2



SPECIMEN No. 3

SPECIMEN No. 4



SPECIMEN No. 5

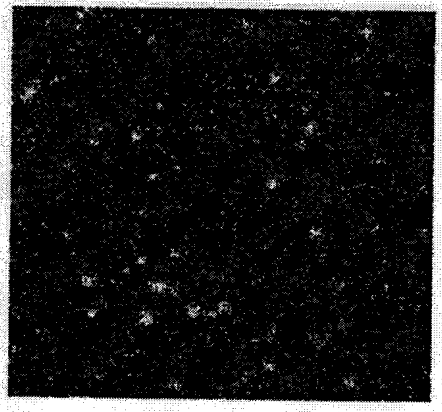


FIG. 6

SPECIMEN No.	ADDITIVE (β)		MAIN COMPONENT $Pb_{\alpha}[(Mn_{1/3}Nb_{2/3})_xTi_yZr_z]O_3$ (x+y+z=1)				ELECTRIC PROPERTIES Q_{max}	HEAT RESISTING PROPERTIES $\lvert \Delta k_{15} \rvert$ (%)	TEMPERATURE CHARACTERISTICS	
	Al_2O_3 (wt%)	SiO_2 (wt%)	α (mol)	x (mol)	y (mol)	z (mol)			$\lvert \Delta F_0(-40°C) \rvert$	$\lvert \Delta F_0(85°C) \rvert$
6	0.01	0.02	0.998	0.10	0.51	0.39	135	3.9	0.18	0.08
7	0.02						125	3.0	0.16	0.05
8	0.10						128	2.9	0.21	0.10
9	0.50						145	1.9	0.27	0.14
10	1.00						110	3.0	0.33	0.19
11	0.10		0.990		0.53	0.37	121	2.3	0.09	0.05
12	0.30						135	2.3	0.04	0.03
13	0.50						136	2.4	0.04	0.07
14	0.70						121	2.3	0.03	0.10
15	1.00						133	2.2	0.04	0.07
16	1.50						122	2.2	0.02	0.06
17	2.00						121	2.1	0.02	0.10
18	3.00						104	2.4	0.00	0.09
19	10.00						73	2.8	0.01	0.13

FIG. 7

SPECIMEN No.	ADDITIVE		MAIN COMPONENT $Pb_\alpha[(Mn_{1/3}Nb_{2/3})_xTi_yZr_z]O_3$ (x+y+z=1)				ELECTRIC PROPERTIES Q_{max}	HEAT RESISTING PROPERTIES $\lvert \Delta k_{15} \rvert$ (%)	TEMPERATURE CHARACTERISTICS	
	Al_2O_3 (wt%)	SiO_2 (wt%)	α (mol)	x (mol)	y (mol)	z (mol)			$\lvert \Delta F_0(-40°C) \rvert$	$\lvert \Delta F_0(85°C) \rvert$
20 *	0.5	0.02	0.990	0.02	0.56	0.42	29	1.1	0.24	0.14
21				0.04	0.58	0.38	81	0.9	0.11	0.14
22					0.56	0.40	85	1.0	0.25	0.02
23					0.55	0.41	117	1.4	0.29	0.09
24 *					0.54	0.42	108	1.4	0.54	0.19
25				0.06	0.56	0.38	95	1.1	0.09	0.04
26 *					0.52	0.42	177	1.5	1.10	0.77
27 *				0.08	0.59	0.33	98	1.5	0.28	0.41
28					0.54	0.38	112	1.7	0.11	0.02
29				0.09	0.55	0.36	114	1.8	0.03	0.19
30					0.54	0.37	119	1.8	0.05	0.11
31					0.53	0.38	124	1.5	0.13	0.03
32					0.52	0.39	154	1.8	0.24	0.07
33				0.10	0.58	0.32	81	1.7	0.23	0.30
34					0.54	0.36	147	2.1	0.02	0.14
35					0.53	0.37	146	1.8	0.05	0.06
36					0.52	0.38	158	1.7	0.14	0.02
37					0.51	0.39	183	1.6	0.25	0.13
38				0.11	0.53	0.36	135	2.7	0.00	0.09
39					0.52	0.37	127	1.9	0.07	0.00
40					0.51	0.38	163	2.0	0.16	0.10
41					0.50	0.39	170	2.0	0.27	0.22
42				0.12	0.58	0.30	80	2.2	0.29	0.40
43					0.56	0.32	98	2.3	0.20	0.28
44					0.50	0.38	177	2.6	0.13	0.15
45			0.995	0.09	0.55	0.36	128	1.3	0.00	0.17
46					0.54	0.37	131	1.6	0.08	0.08
47					0.53	0.38	129	1.2	0.14	0.02
48					0.52	0.39	154	0.8	0.26	0.10

FIG. 8

SPECIMEN No.	ADDITIVE							MAIN COMPONENT $Pb_{\alpha}[(Mn_{1/3}Nb_{2/3})_xTi_yZr_z]O_3$ (x+y+z=1)				ELECTRIC PROPERTIES Q_{max}	HEAT RESISTING PROPERTIES $\lvert \Delta k_{15} \rvert$ (%)	TEMPERATURE CHARACTERISTICS	
	Al_2O_3 (wt%)	Ga_2O_3 (wt%)	Ta_2O_5 (wt%)	Sc_2O_3 (wt%)	In_2O_3 (wt%)	3 (wt%)	SiO_2 (wt%)	α (mol)	x (mol)	y (mol)	z (mol)			$\lvert \Delta F_0(-40°C) \rvert$	$\lvert \Delta F_0(85°C) \rvert$
49	–	0.02	–	–	–	–	0.02	1.000	0.10	0.51	0.39	141	2.2	0.40	0.25
50	–	0.10	–	–	–	–		1.000	0.10	0.51	0.39	145	2.0	0.35	0.23
51	–	–	0.50	–	–	–		1.000	0.10	0.51	0.39	166	2.7	0.12	0.07
52	–	–	0.50	–	–	–		0.995	0.09	0.55	0.36	107	2.8	0.15	0.30
53	–	–	0.50	–	–	–		0.995	0.09	0.53	0.38	119	1.9	0.03	0.17
54	–	–	0.50	–	–	–		0.995	0.09	0.52	0.39	140	1.6	0.05	0.09
55	–	–	–	0.02	–	–		0.990	0.10	0.51	0.39	147	2.9	0.25	0.12
56	–	–	–	0.10	–	–		0.990	0.10	0.51	0.39	138	2.7	0.30	0.17
57	0.45	–	–	–	0.02	–		0.990	0.10	0.51	0.39	131	2.2	0.25	0.15
58*	–	–	–	–	–	0.20		1.000	0.10	0.51	0.39	81	4.5	0.15	0.13
59*	–	–	–	–	–	0.30		1.000	0.10	0.51	0.39	129	4.7	0.09	0.04
60*	–	–	–	–	–	0.50		1.000	0.10	0.51	0.39	120	4.2	0.16	0.13